D. B. W. Hard,

Bandage,

No. 4,432, Patented Mar. 21, 1846.

Fig 1

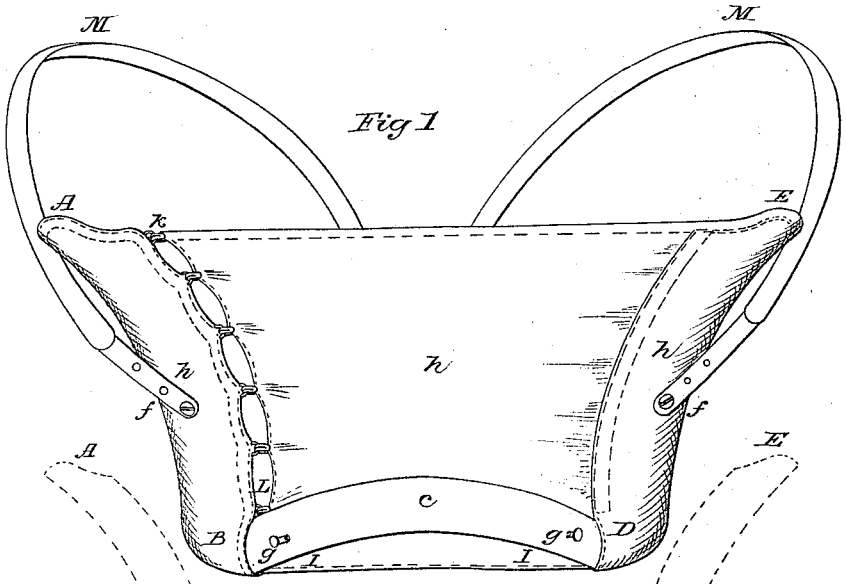


Fig 3

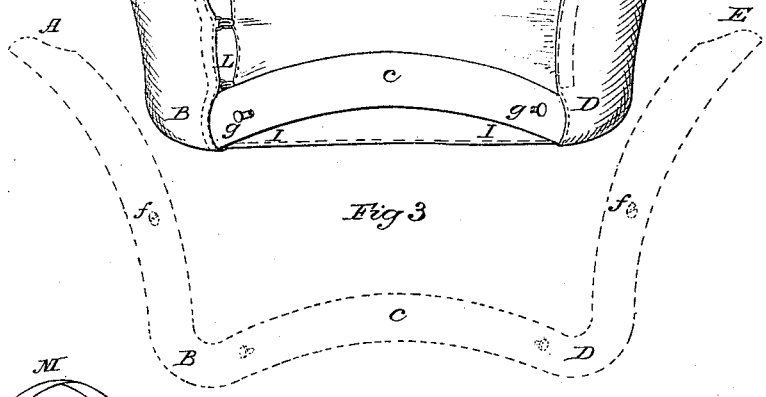
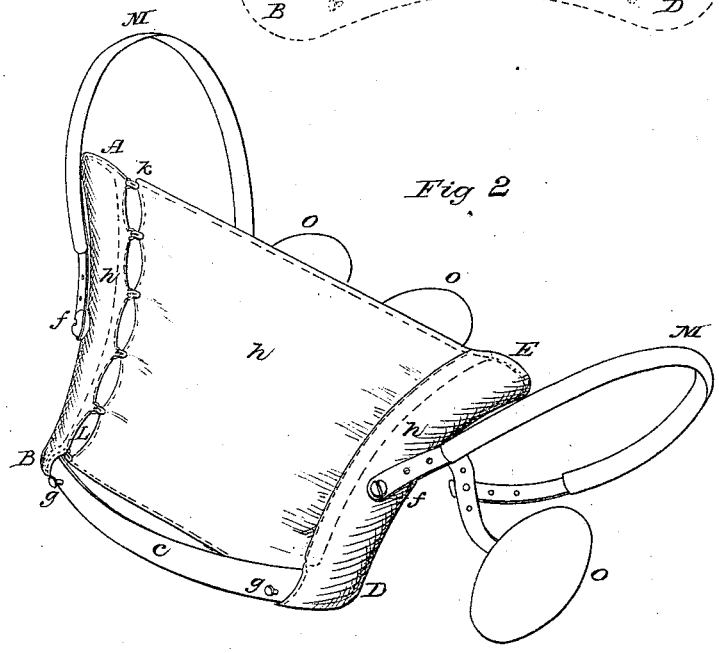


Fig 2



UNITED STATES PATENT OFFICE.

DAVID B. W. HARD, OF BETHLEHEM, CONNECTICUT.

LADY'S TRUSS.

Specification of Letters Patent No. 4,432, dated March 21, 1846.

To all whom it may concern:

Be it known that I, DAVID B. W. HARD, of Bethlehem, in the county of Litchfield and State of Connecticut, have invented a new and Improved Mode of Constructing a Species of Truss, Designed to Act as a Brace or Support to the Abdomen; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in effecting an external support for the abdomen by means of a strip of webbing or other firm cloth which passes transversely across the lower portion of the abdomen above the pubis and between the iliac bones, being attached at its two lateral or iliac extremities to a narrow frame of metal which is bent so as to conform to the shape of the rim of the belly and effects the support of the abdomen by the action of springs which pass from it around to the back. By this arrangement I effect a more efficient support to the abdomen and avoid the difficulties and inconveniences which result from the too great bulk of a front pad—excess of retained heat, friction, and excoriation—some or all of which result from the use of other known means of supporting the abdomen.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

I construct the frame of my support in the following manner. I take a narrow strip of steel and bend it in the shape I desire—first by placing one end of it near the super or anterior spinos process of the ilium of the right side. It extends from thence downward and inward until it arrives near the superior edge of the pubis where it is bent to the left side—from thence it follows the direction of the bone of the pubis until it arrives near the bones of the ilium of the left side, where it is again bent and turned in a direction upward and outward and ascends in the direction of superior anterior spinos process of the ilium of the left side near the region of which it terminates, at a height to correspond with the height of the place of beginning on the right side A B C D E, Fig. 3 of the drawing will show the form given this part of the instrument when constructed in the manner above described. A represents the place of beginning near the anterior superior spinos process of the ilium B the place near the bone of the pubis when it is bent to one side C the part which follows the direction of the bone of the pubis, D the place near the bone of the ilium where it is bent to ascend upward and outward and E the place where it terminates, to correspond with A on the side opposite.

This part which I have thus far described I denominate the frame the different portions of which, for the purpose of description I designate by different names—the two sides A, B, and E, D, I denominate the lateral portions, and the part C between B and D I denominate the base.

Fig. 1 in the drawings represents a front view of the support when all the parts are put together. Fig. 2 a side and perspective view. Fig. 3 a front view of the frame separate from the other parts. The base of the frame between B and D, is arched in two directions—upward as shown at C Fig. 3 and forward as is seen in the perspective view at C Fig. 2.

Fig. 3 is a female screw *g g* small button knobs. The dimentions of the strip of steel out of which the above described frame is constructed is about $\frac{1}{2}$ an inch in width and $\frac{1}{16}$ of an inch in thickness it is made in the form represented at Fig. 3—by being bent edgewise and when placed in its situation at lower part of the abdomen its flat surfaces present one toward the abdomen and the other forward. But this form Fig. 3 may be made of a round rod or of metal having any other width or thickness or it may be made of any other substance than metal which possesses properties suited to the purpose its shape may be varied from that shown in the drawing Fig. 3 by making its curves—the segment of larger or smaller circles. The whole of this frame I cover with some suitable substance such as cloth or leather, &c.

The frame Fig. 3 being constructed as above described I proceed to apply to it, and connect with it that part upon which the abdomen mainly rests for its support. I take a piece of webbing, drilling or other firm cloth and wide enough to extend from A to B, Fig. 1 and having sufficient length to extend from the lateral portion of the frame A, B, transversely to the lateral portion of the frame E, D, to both of which lateral portions it is attached by any convenient mode of stitching or otherwise. The shaded portion of the drawing *h h h* Fig. 1 shows the cloth or covering attached to the frame as above described—it will

pass behind the base of the frame as shown at I, I, and is divided in the direction of K, L, into two parts and connected together by hooks and eyes, lacing or in any other way for the greater convenience of putting on and taking off the frame (Fig. 1) for the purpose of washing and cleansing. In place of the fabric of cloth heretofore described *h h h* Fig. 1 which is attached to the lateral portions of the frame and fills the space between them any other suitable pliable material may be substituted as netting, hair cloth, india rubber cloth or whatever else may possess propensities adapted to this purpose.

M M are springs which attach to the frame of the pad by the screw *f*, *f*, and pass above the hip bone around to back.

o o Fig. 2 are pads which rest upon the back upon each side of the spine.

The metallic frame Fig. 3 forms an external and resisting margin to the support, its lateral portions A B, E, D, furnish the means of attachment to the cloth *h h h* Figs. 1 and 2 and maintains it permanently in a transverse position. The base C—between B and D prevent the approximation of the lateral portions A B E D—by arching upward it is prevented from pressing on the pubis—by arching forward C, Fig. 2 it is prevented pressing against the abdomen. The knobs *g*, *g*, serve to attach one end of a perineal strap.

The cloth *h h h* being attached to the lateral portions of the frame as before described—forms a kind of sling or sacking bottom which adapts itself to the shape of the abdomen and upon which the abdomen rests for its support.

By inspection of the drawing Fig. 1, it will be understood that when the support A, B, C, D, E, *h*, *h*, *h*, is applied between the iliac bones and above the pubis—that the springs M M which fasten to the form at *f*, *f*, and pass over the hips to the back will press the support against the abdomen in a direction backward and upward and in this manner effect support—the advantages of this support are, first, it has but little weight; second, it does not retain the animal heat; third, it perfectly adapts itself to the shape of the belly making the pressure equal wherever there is contact; fourth, the cloth can be easily taken off the frame by any person who uses it—washed like any other garment, and put on again without difficulty; fifth, it does not chafe or excoriate the part which it supports.

What I claim as my invention and desire to secure by Letters Patent, is—

1. In forming a frame to my support which constitutes a narrow outer margin and which in the general outlines of the form given it present three sides—one side toward the right one side toward the left and one side toward the pubis Fig. 3.

2. And I further claim in combination with said frame the mode of effecting support of the abdomen by means of a strip of cloth or other pliable material, extended transversely or in front of its lower portion above the pubis and between the bones of the ilium said cloth being attached at its right and left extremities to the two lateral portions of the said frame hereinbefore described.

DAVID B. W. HARD.

In presence of—
P. J. HEPBURNE,
T. C. DONN.